

Features & Benefits

- 💧 Excellent adhesion to metals
- 💧 Fast cure at room temperature
- 💧 Easy to dispense
- 💧 High shear and peel strength
- 💧 Low odour
- 💧 Low viscosity
- 💧 Non-flammable

Description

PERMABOND® TA452 is a low-odour 2-part, 1:1 toughened acrylic adhesive. It can be used to bond a wide variety of materials including metals, plastics, GRP, ceramics, wood and other substrates. It is convenient to use in an easy-to-dispense cartridge with mixing nozzle or can be applied bead-on-bead* without static mixer.

Physical Properties of Uncured Adhesive

	TA452 A	TA452 B
Chemical composition	Urethane methacrylate	Urethane methacrylate
Colour	Red	Green
Mixed colour	Brownish Purple	
Viscosity @ 25°C	3,000-6,000 mPa.s (cP)	3,000-6,000 mPa.s (cP)
Specific gravity	1.0	1.0

Typical Curing Properties

Ratio of use	1 : 1
Maximum gap fill	0.5 mm (0.02 in) with nozzle 0.2 mm (0.008 in) bead on bead
Nozzle life @23°C	2-3 minutes
Fixture / handling time (0.3 N/mm ² shear strength is achieved) @23°C	6-9 minutes
Tack free time**	<12 hours
Full cure @23°C	24 hours

*If applying bead-on-bead, fixture time and strength performance may be variable depending on the application.

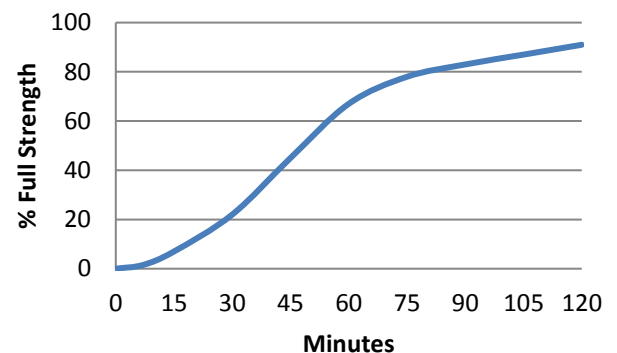
**To achieve a tack-free finish, a static mixing nozzle should be used.

Typical Performance of Cured Adhesive

Shear strength * ISO4587	Steel: 20-24 N/mm ² (2900-3500 psi)
	Aluminium: 18-22 N/mm ² (2600-3200 psi)
	Stainless Steel: 20-24 N/mm ² (2900-3500 psi)
	Zinc: 18-22 N/mm ² (2600-3200 psi)

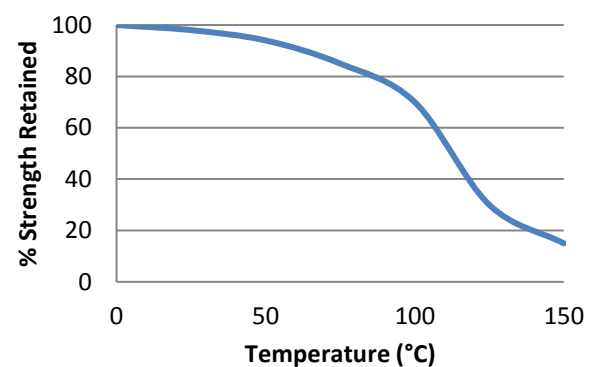
*Strength results will vary depending on the level of surface preparation and gap.

Strength Development



Graph shows typical strength development of bonded components at 23°C. Curing at higher or lower temperatures may affect cure speed.

Hot Strength



"Hot strength" shear strength tests performed on mild steel. Product fully cured at room temperature and conditioned to pull temperature for 30 minutes before testing.

TA452 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -55°C (-65°F) depending on the materials being bonded.

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

Additional Information

This product is not recommended for use in contact with strong oxidizing materials. This product may affect some thermoplastics and users must check compatibility of the product with such substrates.

Information regarding the safe handling of this material may be obtained from the Safety Data Sheet.

Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene.

This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Permabond Cleaner A is recommended for the degreasing of most surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

Directions for Use

- 1) Surfaces must be clean, dry and grease-free.
- 2) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle.
- 3) Assemble components and clamp.
- 4) Maintain pressure until handling strength is achieved. The time required will vary according to the joint design and surfaces being bonded.
- 5) Allow 24 hours for adhesive to fully cure.

Video Links

Surface preparation:

<https://youtu.be/8CMOMP7hXjU>



Structural acrylic directions for use:

<https://youtu.be/edvBe4iYNCY>



Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
---------------------	------------------------

Other Products Available

Anaerobics

- Thread lockers
- Thread sealants
- Gasket makers
- Sealants / retainers

Cyanoacrylates

- Instant adhesives
- For rapid bonding of metals, plastics, rubber and many other materials

Epoxies

- Two-part room temperature cure adhesives
 - Single-part heat cure adhesives
- Modified Technology (MT) flexible grades available

MS-Polymers

- Single-part, moisture-curing, flexible sealants

Polyurethanes

- Two-part room temperature curing adhesives

Toughened Acrylics

- Rapid curing, high strength structural adhesives

UV Light Cured Adhesives

- Glass / plastic bonding
 - Optically clear
 - Non-yellowing

www.permabond.com

• UK: 0800 975 9800

• General Enquiries: +44 (0)1962 711661

• US: 732-868-1372

• Asia: + 86 21 5773 4913

info.europe@permabond.com

info.americas@permabond.com

info.asia@permabond.com

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.